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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/591,924

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Thomas Ludwig

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EXAMINER

MCCALL, ERIC SCOTT

ART UNIT

PAPER NUMBER

2855

MAIL DATE

DELIVERY MODE

06/12/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/591,924	Applicant(s) LUDWIG ET AL.	
	Examiner Eric S. McCall	Art Unit 2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13,20,22,23 and 27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13,20,22,23 and 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>Feb. 27, 2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DEVICE FOR DETECTING THE COMBUSTION-
CHAMBER PRESSURE IN AN
INTERNAL COMBUSTION ENGINE

FINAL OFFICE ACTION

This action is in response to the Applicant's amendment dated Feb. 27, 2009.

CLAIMS

Obvious-Type Double Patenting

In response to the Applicant's amendments, the rejection of claims 13-27 under nonstatutory obviousness-type double patenting as set forth in the previous office action (Oct. 31, 2008) has been overcome.

35 U.S.C. § 112

In response to the Applicant's amendments, the rejection of claims 13-27 under 35 U.S.C. 112, second paragraph, as set forth in the said previous office action has been overcome.

35 U.S.C. § 102

In response to the Applicant's amendments, the rejection of claims 13-22, 24, 26, and 27 under 35 U.S.C. 102(b) over Murai et al. (6,539,787) as set forth in the said previous office action has been overcome.

However, the following now applies:

35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13, 20, 22, 23, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murai et al. (6,539,787).

With respect to claim 13, Murai et al. set forth a device (Fig. 1), comprising:

a glow plug including a housing via which the glow plug is mounted inside a cylinder head of an internal combustion engine, the glow plug further including at a first end (bottom of Fig. 1) a heating pin (203) that projects at least partially into a combustion chamber of the internal combustion engine when the glow plug is installed, the heating pin being affixed inside the glow plug with the aid of a fixation member (207); and

a sensor (300) situated in the housing between the fixation member (207) and a second end of the glow plug (top of Fig. 1), the sensor disposed separately from the heating pin (203), in a “force-locking manner” (in order to maintain the sensor in position) between the fixation member (207) and a fixation element (209/209b) implemented with “prestressing” (ie. the sensor is held in place by the prestressing created by the placement of the terminal nut 211).

However, Murai et al. fail to set forth the fixation element (209/209b) being a sleeve *crimped* with the housing.

Instead, Murai et al. set forth that the fixation element (209/209b), which is a sleeve, *engages* the inner circumferential surface of the housing (201)

As such, it would have been obvious to one having ordinary skill in the art armed with said teaching to use crimping as the form of engaging as taught by Murai et al.

The motivation being that crimping is a commonly used method of attaching coaxial sleeves together because it is a very inexpensive yet effective way.

As further motivation that crimping would have been obvious to one having ordinary skill in the art, the Applicant has admitted that as a functional equivalent to crimping, the fixation element could rest directly against the sensor (page 3 of specification, lines 26-28), and Murai et al. do set forth that the fixation element (209/209b) rests directly against the sensor (300).

With respect to claim 20, Murai et al. set forth that the sensor (300) is separated from the fixation member (207) by at least one spacer member (208).

With respect to claim 22, Murai et al. is interpreted as setting forth that the spacer member (208) is an intermediate sleeve as claimed.

With respect to claim 23, Murai et al. fail to teach that the intermediate sleeve is made of graphite.

However, it would have been obvious to one having ordinary skill in the art armed with said teaching to make the intermediate sleeve out of graphite.

The motivation being that the intermediate sleeve is nothing more than a spacer element and graphite is a well known and commonly used material in the making of a spacer element.

With respect to claim 27, Murai et al. set forth that the sensor (300) is a force sensor embodied as a piezo ring as claimed.

CONTACT INFORMATION

The Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). The Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Eric S. McCall whose telephone number is (571) 272-2183.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2855

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Eric S. McCall/
Primary Examiner
Art Unit 2855